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ABSTRACT

Studies have shown that participation in the labor force is related to race. 1960 Census data from 193 poor census tracts in Detroit and Chicago show that educational attainment of the urban poor is even more significant than race in determining (1) the level of participation in the work force, and (2) the sensitivity of this participation to rises and falls in the local unemployment rate. High school dropouts are more likely than high school graduates to be discouraged from seeking work when unemployment is high, and they are slower to seek work when employment is rising. (Author/DM)

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ABSTRACT

Studies have shown that participation in the labor force is related to race. The author, using 1960 Census data from 193 poor census tracts in Detroit and Chicago, finds that educational attainment of the urban poor is even more significant than race in determining (1) the level of participation in the work force, and (2) the sensitivity of this participation to rises and falls in the local unemployment rate. High school dropouts are more likely than high school graduates to be discouraged from seeking work when unemployment is high, and they are slower to seek work when employment is rising.

Education and Labor Force Participation of the Poor*

by Stuart O. Schweitzer

In this paper the hypothesis will be tested that educational attainment of the poor segments of the urban population is a determinant of the sensitivity of their labor force participation to changes in the local unemployment rate. This research indicates that education has policy implications for reducing poverty that have previously been unnoticed.

The study begins with a statement of the problem and a proposed hypothesis. Then the data and method of analysis will be described. Next the findings will be discussed - first relating to the behavior of mean labor participation rates, and then, to the sensitivity of the participation rates to changing unemployment conditions. Our findings are interpreted in the following section with respect to the hypothesis posed at the beginning of the study. Concluding remarks, along with a brief discussion of the policy implications of our findings, complete the paper.

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The Hypothesis

Poverty in the United States today is the consequence of several interacting socio-economic barriers. Beginning with below average education and productivity, the poor then are more afflicted by low labor force participation and higher rates of unemployment. Even when a worker in the poverty group is employed, the occupation in which he is engaged is more likely to be of the unskilled, unsteady, unrewarding type. And in addition wage and promotion discrimination still prevents the poor worker from joining fully in the fruits of our nation's prosperity. One of these barriers, the character of labor force participation among the poor, has been studied by Mooney,¹ with some very interesting findings. It is possible, however, that Mooney's analysis, while illustrating important behavioral relationships, has, in fact, failed to show the underlying determinants of labor force participation of the poor.

The short-run shifts in the supply of labor to changes in demand have been viewed three ways--gross flows,² time series,³ and, more recently, by cross sectional analysis.

¹J.D. Mooney, "Urban Poverty and Labor Force Participation," American Economic Review, Vol. LVI, pp. 104-119, March 1967.

²See W.L. Hansen, "Cyclical Sensitivity of the Labor Force," American Economic Review, Vol. LI, June 1961, pp. 299-309, and S. Altman, Unemployment of Married Women, unpublished Ph.D. dissertation, University of California, Los Angeles, 1963.

³See K. Strand and T. Dernberg, "Cyclical Variation in Civilian Labor Force Participation," Review of Economics and Statistics, November 1964, pp. 378-391, and "Hidden Unemployment 1953-1962," American Economic Review, col. LVI, March 1966, pp. 71-96; A. Tella, "The Relation of Labor

Cross sectional analysis of labor force sensitivity to changes in labor demand are found in two major studies, one done by Bowen and Finnegan,⁴ and another by Mooney.⁵ The former study related labor force participation rates to unemployment rates across cities, SMA's and SMSA's for three census years: 1940, 1950, and 1960. The findings were, for the most part, consistent with the other studies mentioned: an inverse relationship was found between the unemployment rates and the labor force participation rates for all males, teenage girls, and for married females (with husband present). This pattern is referred to as the discouraged-worker effect. The additional worker effect is found to be weak and usually unobserved. Mooney's study was focused upon another problem: the impact of employment opportunities on labor force participation of the poor. Extensive cross sectional analysis of poverty census tracts in 52 SMSA's permitted the testing of the additional worker hypothesis for females and for married females with husband present in these areas. Further breakdown by race was also done, and the author arrived at interesting results:

- 1) The non-white census tracts exhibited substantially higher mean labor force participation rates than did the white tracts (72.8 percent and 41.1 percent for males and females, respectively, versus 63.7 percent and 35.2 percent).

Force to Employment," Industrial and Labor Relations Review, vol. 17, April 1964, pp. 454-469 and "Labor Force Sensitivity to Employment by Age and Sex," Industrial Relations, vol. 4, February 1965, pp. 67-83.

⁴W.G. Bowen, and T.A. Finnegan, "Labor Force Participation and Unemployment," in A.M. Ross, editor, Employment Policy and the Labor Market, Berkeley 1965, pp. 115-161.

⁵op. cit.

- 2) For none of the race/sex subgroups was the additional worker pattern visible.
- 3) The strongest discouraged worker effect was observed for non-white married females with husband present.

The effect of race appears strongly in this analysis. In fact, in a footnote, Mooney shows that the sensitivity of the labor force participation rate of poor females to the SMSA's unemployment rate is a significantly positive function of the percentage of the population in the SMSA which is non-white.

Though informative, a study showing that the strength of the discouraged worker effect is a function of race is less useful, from a policy standpoint, than one which might show that a specification using a policy variable as the independent variable is also consistent with the data. Education might be posed as such a variable. We do know that non-whites are, on the average, less educated than whites. Furthermore, it is possible that higher educational attainment would serve to condition the population to participate more fully in the labor force in response to employment opportunities. Historically, education has been a strong homogenizing influence, reducing class inequality in the United States labor force.

Data and Method of Analysis

The present study utilizes 1960 census data from 193 poor census tracts in two large mid-western SMSA's: Chicago and Detroit. The tracts were selected, as were Mooney's, on the basis of "relative" rather than "absolute" poverty, in that the median family income in each tract was less than two-thirds of the median family income of the entire SMSA. For each of the two urban areas, the male and female labor force

participation rate, by census tract, was related to the corresponding unemployment rate in the tract. For males the regression of the male labor force participation rate upon the male unemployment rate will yield a measure of the strength of the discouraged worker effect directly. For females, the use of the female unemployment rate as the independent variable will measure the female discouraged worker effect, while the use of the male unemployment rate as the independent variable will serve as a test for the additional worker phenomenon.

The sample will be subdivided by sex and by race to compare our findings for the more restricted sample with those of Mooney. Our distinction between non-white (N) and white (W) tracts is similar to his.⁶ Subsequently, the sex classifications are subdivided by educational attainment.⁷ The percentage of the census tract residents who have completed at least four years of high school is used as a criterion, with a dividing line of 20 percent and above denoting "graduate" tracts (G) as distinguished from "dropout" tracts (D). The

⁶W census tracts were defined as those tracts whose population is 50 percent non-white or less. N tracts represent the residual. We have omitted Mooney's N* classification on the grounds of simplicity, in as much as his findings failed to show any distinctly unique behavior for those tracts other than what one would expect, given the two other classifications.

⁷In a subsequent study, Bowen, W.G., and Finnegan, T.A., The Economics of Labor Force Participation (Princeton, 1969), the direct effect of education on labor force participation was considered. The difference in methodology between the Bowen and Finnegan study and this one is that here education is introduced simultaneously with labor market conditions, so that an interaction effect can be observed. To the extent that a work of the magnitude of that volume can be described in so short a manner, the findings of the present study are generally consistent with the work of Bowen and Finnegan.

differences observed between the two educational groups can then be compared to those observed between the two racial groups. The census data did not permit cross-tabulation of the data by sex, race, and educational attainment.

Mean Participation Rates

Our first finding concerns the average labor force participation rate by sex and race and, alternatively, by sex and educational attainment. Table 1 shows the mean labor force participation rate across the poor tracts for our two metropolitan areas.

TABLE 1						
MEAN LABOR FORCE PARTICIPATION RATE IN POOR CENSUS TRACTS BY POPULATION SUBGROUP						
Mean LFPR and (Standard Deviation)						
City	Race			Schooling		
Detroit	Females					
	W	34.66%	(10.81)	G	39.07%	(8.91)
	N	31.31	(7.56)	D	28.90	(6.05)
	Males					
	W	73.22	(5.27)	G	73.68	(4.57)
	N	69.34	(8.18)	D	68.67	(8.40)
Chicago	Females					
	<u>8/</u>			G	40.01	(9.83)
				D	35.23	(8.99)
	Males					
	<u>8/</u>			G	74.80	(9.30)
				D	71.70	(8.62)

⁸The small number of white poverty census tracts in Chicago (7 out of 111) precludes analysis of W tracts for this city. Poverty as we have defined it is essentially synonymous with non-white poverty for Chicago.

Table 1 illustrates our first finding which is different from Mooney's. We find that whites have a significantly higher mean labor force participation rate than do non-whites (significant in each case at 5 percent) for both sexes. Though this difference is observed only for Detroit, the educational classification is shown for both cities. We find that the high-school graduate tracts exhibit higher mean labor force participation than do the drop-out tracts. Again, this difference is significant at 5 percent for both sexes, and for both cities. Given the high degree of association between non-whites and low educational attainment, the findings are, of course, entirely consistent with one another.

A second interesting observation lends credence to the basic point of this research. It is that the differences in mean labor force participation rate are greater across educational lines than they are across racial lines for both sexes. For males the difference in mean labor force participation rate and between white and non-white is 3.88 percent (significant at 2.5 percent) and for females the difference is 3.35 percent (significant at 20 percent), whereas the differences between graduate and dropout tracts are 5.01 percent (significant at 0.1 percent) and 10.17 percent (also significant at 0.1 percent) for males and females, respectively. Not only is the difference between educational groups greater in absolute terms than that between racial groups, but the difference is statistically more significant, as well. For both sexes and in both cities, education appears to raise appreciably the labor force participation rate.

Equally as important as measuring the mean participation rates for the various population sub-groups is the measurement of the sensitivity of this rate to a change in the unemployment rate. This measurement will permit us to speculate on the labor force changes which might accompany changing employment conditions of the poor.

Sensitivity of Participation to Unemployment

The relationship between the local unemployment rate and the labor force participation rate for each of our subgroups can be expressed most simply by a linear function of the form $LFPR = a + b U$, with LFPR and U representing the tract labor force participation rate and the tract unemployment rate, respectively, by sub-group, by city. The specification of the regression equation implies, of course, that a positive coefficient demonstrates the additional worker effect, while a negative coefficient demonstrates the discouraged worker effect. Table 2 summarizes the results of these regressions. For clarity, coefficients that are not significantly different from zero (at less than 20 percent probability) are replaced by a hyphen in the table.

Females

For females of both races in Detroit the regression coefficients for tract labor force participation rates regressed upon their own unemployment rates are insignificant. Only for non-white females with the male unemployment rates as the independent variable is the regression coefficient significantly negative.⁹ We notice, however, that for

⁹This negative coefficient can not be interpreted as an indication of the discouraged-worker phenomenon, however, because it pertains to the male unemployment rate, rather than that for females.

TABLE 2
Change in Percent Labor Force Participation Rate Accompanying
Unit Change in Percent Unemployment

Population Group		"b" Coefficient ^{a/} (std. dev.)	F ^{b/} (Deg. of Freedom)	R	
RACE	Female	W	- _{c/} DETROIT	0.12	
		N	-	0.15	
		W _{d/}	-	0.06	
		N _{d/}	-0.391***** (0.141)	7.71** (2.64)	0.33
	Male	W	0.670***** (0.240)	7.81** (2.18)	0.55
		N	-0.336*** (0.156)	4.65* (2.64)	0.26
EDUCATION	Female	G	-0.455** (0.285)	2.55 (2.25)	0.30
		D	0.086* (0.063)	1.83 (2.57)	0.18
		G _{d/}	-	-	0.09
		D _{d/}	-	-	0.14
	Male	G	0.373*** (0.174)	4.60* (2.25)	0.39
		D	-0.319*** (0.167)	3.65* (2.55)	0.25
CHICAGO					
EDUCATION	Female	G	-0.376* (0.232)	2.61 (2.53)	0.22
		D	-	-	0.06
		G _{d/}	-0.628***** (0.256)	6.02** (2.53)	0.32
		D _{d/}	-	-	0.12
	Male	G	-0.866***** (0.226)	14.65** (2.53)	0.47
		D	-	-	0.13

a/ * denotes coefficient significant at 20 percent, ** at 10 percent, *** at 5 percent, and **** at 1 percent.

b/ * denotes F statistic significant at 5 percent, ** at 1 percent.

c/ Coefficient is not significantly different from zero at 20 percent probability.

d/ Independent variable is male unemployment rate in the census tract.

educational attainment, the difference in discouraged worker effect is very pronounced in Detroit.

For females in Chicago, too, the graduate females are far more subject to the discouraged worker effect than are the non-graduates. Here this phenomenon is visible whether female or male unemployment is used as the independent variable. The coefficients are significantly negative for graduates, but insignificant for drop-outs. Education clearly appears to strengthen discouraged-worker behavior.

Our test for the additional-worker effect for women was rather interesting: it did not appear. None of the relevant coefficients were positive. A few of the coefficients, in fact, appeared significantly negative, indicating behavior distinctly contrary to that of the additional-worker hypothesis.

Males

Surprisingly, we do see some evidence of the additional worker behavior when we look at males. For Detroit, white and graduate males both strongly exhibit this pattern. In Chicago this phenomenon is not repeated. In fact male graduates in Chicago exhibit a very strong discouraged-worker pattern, unlike their Detroit brethren. This suggests that structural factors within cities may have a significant role in determining the sensitivity of labor force participation to unemployment, and that these factors may generate inter-city differences in observed behavior. To generalize for all cities may be a hazardous procedure. There also may be problems in correctly interpreting these regression results.

Race and Education

What differences in labor force behavior are evident when one considers either racial or educational groups? Are observed differences between the behavior of whites and non-whites due to the racial differences itself, or is there an underlying factor which merely appears to be related to race. Our hypothesis is that differences in educational attainment cause even greater differences in labor force sensitivity than do racial differences and are therefore a more basic influence.

As we have indicated above, whites appear to be less like discouraged workers than are non-whites. For males (Detroit), non-whites are strongly discouraged workers while whites are strongly like additional workers. For females, there is no significant difference between the two groups when the female's own unemployment rate is used. But for educated females, there is a marked tendency toward the discouraged-worker behavior. This effect is noticeable for both Chicago and Detroit. The effect of race is insignificant in determining the labor force sensitivity for females but the effect of education is strongly toward "discouragement."

For males, the ordering of importance between race and education is reversed. For Detroit, non-white males are more like discouraged workers than are their white counterparts, and drop-out males are more discouraged than are those who graduated. In other words, higher educational attainment for males appears to cause an additional worker behavior pattern - an effect opposite to that observed for females. The second

observation differentiating the behavior of men and women is that the differences attributable to race are relatively greater in the case of males than are those attributable to educational attainment.

For Chicago, the discouragement effect of education previously associated with women is also observed for men.

Conclusion

From the results, a pattern is suggested in which there are significant differences in labor force behavior between workers in poor areas when divided by sex and either race or educational attainment. The role of education in increasing the mean labor force participation rate has been found to be important for both sexes, and this education effect dominates the effect of race. For females, higher educational attainment produces a tendency toward the discouraged worker behavior in both cities. Where this effect can be compared to that of racial differences which show a discouraged black worker effect, education is the stronger determinant. For males, the effect of higher educational attainment appears to be less strong than the effect of racial differences and is not consistent between cities though the data does not permit analysis strictly comparable to that done for females.

A possible explanation for the female behavior differences associated with educational attainment is that education tends to place workers in essentially the same labor supply pool regardless of sex. As long as men and women compete for different types of employment at different wage levels, differences between labor force sensitivity to ambient employment conditions might well be expected. But the educated woman is in another category than those without education, when

occupational eligibility is considered. An educated woman can expect to find herself competing for nearly the same employment opportunities as men. Thus education effectively removes her from the supply pool of low wage secondary-earner females. The more highly-educated woman, whether because of her higher level of assets (or that of her husband) or her higher aspirations acts more like the primary wage earner and tends to exhibit the same discouraged-worker behavior.

It is apparent that education can play yet another important role in the elimination of poverty. Not only are educated workers more employable, as numerous studies have shown, but an educated worker is even more likely to offer his (or her) labor services in an expanding market, thus aiding the poor in their efforts to join the mainstream of the nation's economic life.

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